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APPLICATION NO.		FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/034,699		12/27/2001	James C. Matayabas JR.	42390P10938X	2487	
8791	7590	02/06/2004		EXAMINER		
		DLOFF TAYLOR & BOULEVARD, SEVE	CAIN, EDWARD J			
LOS ANGE		,	William	ART UNIT PAPER NUMBER		
			1714			
				DATE MAILED: 02/06/2004		

Please find below and/or attached an Office communication concerning this application or proceeding.

				14				
		Application No.	Applicant(s)	- Ju				
	055 4-45 0	10/034,699	MATAYABAS, JAMES C.					
	Office Action Summary	Examiner	Art Unit					
		Edward J. Cain	1714					
Period fo	The MAILING DATE of this communication apor Reply	pears on the cover sheet with the	correspondence addres	:s				
THE - Exte after - If the - If NC - Failt Any	MAILING DATE OF THIS COMMUNICATION. Insions of time may be available under the provisions of 37 CFR 1. SIX (6) MONTHS from the mailing date of this communication. In period for reply specified above is less than thirty (30) days, a reput of the provision of	136(a). In no event, however, may a reply be ti oly within the statutory minimum of thirty (30) da will apply and will expire SIX (6) MONTHS fron e, cause the application to become ABANDON	mely filed ys will be considered timely. the mailing date of this commur TO (35 U.S.C. 8 133)	nication.				
Status								
1)	Responsive to communication(s) filed on							
		s action is non-final.						
3)	3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is							
	closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.							
Disposit	ion of Claims							
4) 🖾	Claim(s) 1-30 is/are pending in the application).						
	4a) Of the above claim(s) is/are withdra	wn from consideration.						
5) 🗌	Claim(s) is/are allowed.							
6)⊠	Claim(s) <u>1-30</u> is/are rejected.							
7)	Claim(s) is/are objected to.							
8)	Claim(s) are subject to restriction and/o	or election requirement.						
Applicati	ion Papers							
9)[The specification is objected to by the Examina	er.						
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.								
	Applicant may not request that any objection to the	•						
	Replacement drawing sheet(s) including the correct							
11)	The oath or declaration is objected to by the E	xaminer. Note the attached Office	Action or form PTO-15	52.				
Priority ι	ınder 35 U.S.C. § 119							
_	Acknowledgment is made of a claim for foreign All b) Some * c) None of: 1. Certified copies of the priority document 2. Certified copies of the priority document 3. Copies of the certified copies of the priority document	s have been received. s have been received in Applicati	on No					
	application from the International Burea		o in this ivational Stage	е				
* S	see the attached detailed Office action for a list	. ,,	d.					
Attachment								
	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO-948)	4) 🔲 Interview Summary Paper No(s)/Mail Da	(PTO-413)					
3) 🔯 Inform	nation Disclosure Statement(s) (PTO-1449 or PTO/SB/08) No(s)/Mail Date		atent Application (PTO-152)					

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-9, 12-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Schoenstein et al.

Schoenstein et al disclose heat conductive gel compositions suitable for use on circuit boards (abstract). These compositions are taught as comprising alkenyl functionalized polysiloxanes with specified viscosities which qualify them as silicone oils, hydrogen functionalized polysiloxanes, heat conductive particles, alkyl terminated polysiloxanes (column 6, line 5) and catalyst (claim 6). The conductive particles taught as suitable greatly overlap those claimed instantly (see claim 8 of the patent) and have particle sizes meeting applicants' limitations (claim 9). Relative amounts of alkenyl and hydrogen functionality such as claimed instantly are taught at claim 6 of the patent. The alkyl terminated polysiloxanes are seen as qualifying as applicants' claimed crosslinker.

Therefore, the reference anticipates the rejected claims.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 22- rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al in view of Schoenstein et al and Culhane et al.

Kim et al disclose semiconductor packages comprising a substrate, a semiconductor device mounted on the substrate, a bonding pad mounted on the semiconductor device, a heat spreader mounted on the bonding pad and a metal cap contacting the heat spreader via a thermal compound (claim 1). This metal cap is seen as qualifying as a thermal element. This reference further teaches the solder ball technique (figures 6-8).

This reference lacks a disclosure of applicants' claimed gel composition, the interposer of instant claims 23-25.

The reference to Culhane et al demonstrates that the use interposers is well known in the art of semiconductor device packaging (see figures 2-6).

The reference to Schoenstein et al teaches the use of siloxane gel formulations as heat conductive pad materials as discussed above.

Therefore, it would have been obvious to one of ordinary skill in the art to construct the semiconductor package of Kim et al incorporating and interposer to achieve the desired electrical connective pathways and to use the siloxane gel of Schoenstein et as the adhesive/pad material when the benefits of this material as taught by Schoenstein et al were desired.

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Claims 4, 10, 11 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward J. Cain whose telephone number is (571) 272-1118. The examiner can normally be reached on M-F from 10:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on 571 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

> Edward J. Cain Primary Examiner

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